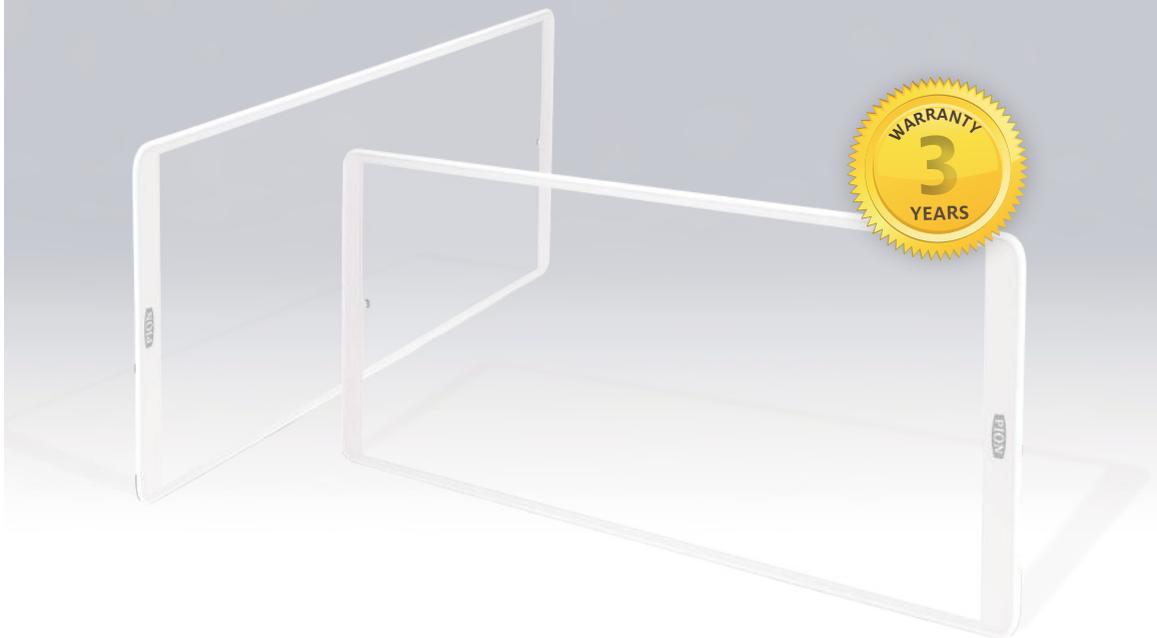


**SHADOW**  
CRYSTAL  
ThermoGlass®

Infrared Heating  
Glass Solutions



Shadow Crystal glass infrared panel heaters

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# User Manual

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Model types:

905101 – 400 W / 905102 – 600 W / 905103– 800 W / 905104- 1000 W / 905105 - 1300 W



Lower  
weight



Smaller  
dimension



More  
heat



Made in  
Czech Republic



**Dear Customer,**

**Heat Outdoors would like to thank you for the trust you have put in our company by purchasing the Shadow Crystal infra-red panel heater.**

**We firmly believe that you will be satisfied with its thermal comfort, convenience and low cost of use.**

**Please take a few minutes to review this manual, which will provide you with the necessary information about placing and using your new heater.**

Heating by means of infra-red radiation is highly effective and reasonably economical. It is currently considered to be the most effective type of heating. Heat transfer by means of infra-red rays causes 93% of the radiated heat to be absorbed by the floor, walls and objects in the room, which then warm up the surrounding air.

**Install the Shadow Crystal Glass infrared heater panel on the wall.** The heating side of the panel heats up to 180 °C, evenly radiating heat rays and heating up the surrounding surfaces which then use the accumulated heat to warm up the air.

This heating method has many advantages over the other types, such as increased area for heat transfer, occurrence of rotating columns of dust limited to a minimum, generally slower cooling of the room, minimum heating of air under the ceiling or significantly reduced drying of air. All these features in turn contribute to the conservation of electricity, thus ranking infra-red heating among the most convenient and at the same time energy efficient methods of modern heating.

## TABLE OF CONTENTS

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Safety Instructions	5
Contents of the Product Package	6
Technical Data	6
Minimum installation distances	6
Manipulation with the pannel	7
Mounting instructions	7
Installation	8
Wiring instructions	8
Connection instructions	8
Unit Operation and Maintenance	9
Troubleshooting	9
Storage Instructions	9
Terms of Warranty	10
Certificate of Warranty	11
Proof of Sale	11



**Before using the Shadow Crystal infrared heater for the first time, please make sure you have read this user manual thoroughly; and once finished, keep the brochure handy for possible future consultation, as long as you continue using the unit.**

## SAFETY INSTRUCTIONS

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- **When in operation, the heating side of the panel reaches a temperature of 180 °C.**
- **Avoid touching the surface of the heater not only when in the „on“ mode, but also several minutes after switching off. Risk of burn injury!**

### Operational safety

- Do not use the heaters for other than the stated purposes of heating.
- Do not interfere with the structural design of the heaters! Making any structural modifications will void the warranty.
- Install the heaters in accordance with the installation and wiring instructions.
- The heaters are designed to heat residential and utility rooms, except for areas where there is a risk of explosion.
- The heaters can be used in wet areas, but may not be in direct contact with water.
- Do not sink the heaters in water or other liquids; this would cause damage to the heaters.
- The power cable may not be in contact with the hot surface of the heater!
- Do not hang any other objects on the fixed heater and do not cover its surface.
- Heater repairs must be performed by qualified personnel of an authorized service centre.
- Only original spare parts can be used to repair the heaters.
- Do not touch the heating side; this reduces heating efficiency.

### Wiring instructions

- Connect the heaters to a 230V AC power source only.
- Heater connection to the mains should only be done using a dedicated cable.
- In the case of fixed installation with thermostats, entrust the electrical connection to a professional company.
- Faulty connection of the device will void the warranty!



- **The heater must not be used, if the glass is damaged!**
- **Mount the IR panel in accordance with the minimum space and size requirements** (see page 6).
- **Prevent children from operating and touching the heaters!**
- **This heater is not intended for use by persons whose reduced physical, sensory or mental capabilities or lack of experience and knowledge prevent them from safe use of the heater unless supervised or instructed on its use by a person responsible for their safety.**

## CONTENT OF THE PRODUCT PACKAGE

- **Shadow Crystal** infrared heating unit



- Installation kit



- User manual + Certificate of Warranty

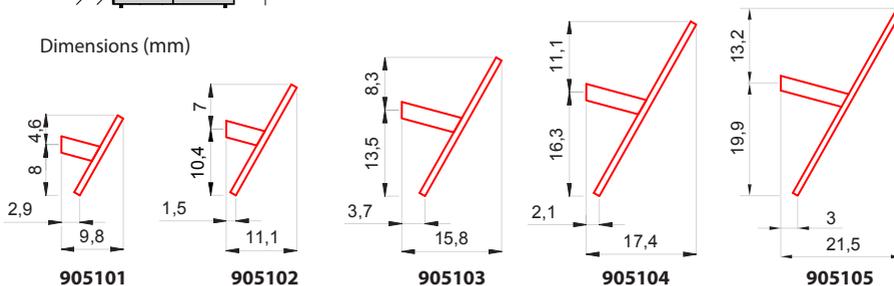
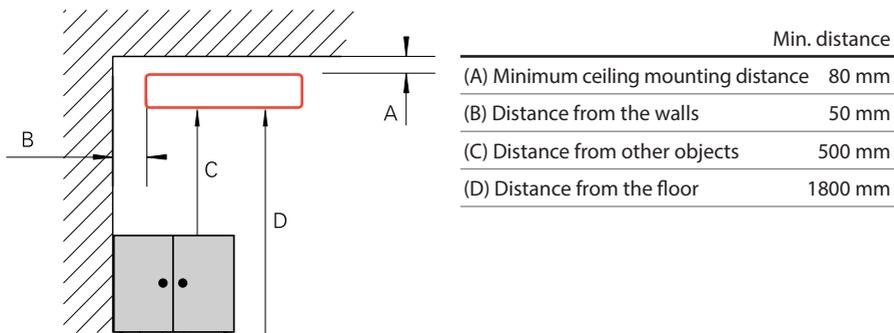


## TECHNICAL DATA

Model <b>CRYSTAL</b>	Nominal Output (W)	Voltage (V)	Rate of Current (A)	Dimensions (mm)	Weight (kg)	IP Code	Heated area* (m <sup>2</sup> )
<b>905101</b>	400	230	1.7	930 x 130 x 10	2.5	IP54	6.5
<b>905102</b>	600	230	2.6	930 x 190 x 10	3.4	IP54	10.0
<b>905103</b>	800	230	3.5	930 x 240 x 10	4.4	IP54	13.0
<b>905104</b>	1000	230	4.3	930 x 305 x 10	5.5	IP54	16.5
<b>905105</b>	1300	230	5.7	930 x 385 x 10	6.0	IP54	20

\* indicative only

## MINIMUM INSTALLATION DISTANCES



## MANIPULATION WITH THE PANNEL

When handling the heater during installation, use clean cloth gloves. Avoid contact with the heating glass surface. Both before and after installing the panel, clean it gently (especially the heating surface) with a perfectly clean and non-abrasive cloth soaked in alcohol-based window cleaner (to be done only when the panel is switched off and cold!).

## MOUNTING INSTRUCTIONS

The length of cables of the pannel is **500 mm**, it's necessary to choose position of the wiring box in view of this fact.

Keep the minimal installation distances (A, B, C, D).

The assembly kit guarantees safe attachment of the IR panel to any structure made of wood, concrete, bricks or blocks.



### Plasterboard ceiling mounting:

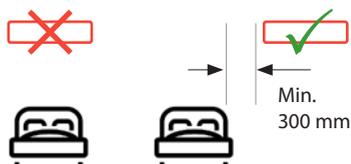
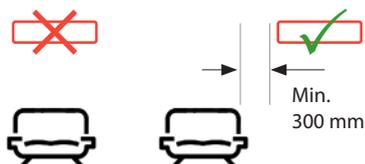
- When installing on plasterboard, it is necessary to use specific dowels for plasterboard (not included).
- The thermal resistance of the material of the ceiling must be at least 80° C.
- If the plasterboard is wet (i.e. humidity greater than 60%), it is necessary to dry it gradually during the first week of heating. If the IR panel is started at full power (i.e. to increase the room temperature to 22 °C), it would quickly dry the wet plasterboard and this could crack in the area near the panel.



### Manufacturer's recommendation

#### Do not place the infrared panel directly above any sofa, couch, bed, dining table, etc.

The panel is made of tempered glass. The material complies with ČSN EN 12150-1 + A1 and the construction of the panel is designed so that in case of damage, the fall of its parts is eliminated as much as possible. Despite these measures, shards may fall, if the panel is mechanically damaged.



## INSTALLATION

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- Select a suitable place to mount the infrared panel on the wall according to mounting kit and mark the position of the holes for anchoring brackets.
- Drill dowel holes with a drill and then place them in the holes .
- Using self-tapping screws, fasten the brackets to the prepared dowels.
- In the case of wall mounting, use the enclosed washers.
- Insert the mounting parts on the back of the panel into the holes in the brackets and secure the panel with the enclosed nuts.
- Connect the panel to electrical wiring or socket cable.



- **Before the first run, clean the heating surface with technical alcohol or another alcohol-based cleaner suitable for glass.**

## WIRING INSTRUCTIONS

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The electrical wires must be connected to the appliance by a qualified professional in accordance with the manufacturer's instructions in accordance with the applicable local safety regulations

- The electrical connection of the infrared panel must be provided by a cable with a corresponding electrical load.
- The electrical connection of the phase **L1** and zero **N** conductors to the infrared panel conductors is interchangeable.
- The connection of the infrared panel to the electrical network using a thermostat must be performed according to the instructions of the thermostat manufacturer.
- Place the thermostat at a height of approx. 1.5 m from the floor. For proper operation, do not place the thermostat in a zone of direct exposure to heat rays or other heat sources, or in a draft.
- In accordance with the relevant regulations, the fixed wiring must include means for disconnection from the grid and opening of contacts at all poles.

## CONNECTION INSTRUCTIONS

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The electrical wires must be connected to the appliance by a **qualified professional** in accordance with the manufacturer's instructions in accordance with the applicable local safety regulations.

## UNIT OPERATION AND MAINTENANCE

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The heating unit you have purchased basically does not require any maintenance or service. There are only two tasks necessary for ensuring its continuous reliable operation over the years:

- If dusty, clean the panel gently (especially the heating surface) with a perfectly clean and non-abrasive cloth soaked in alcohol-based window cleaner (to be done only when the panel is switched off and cold!).



### **The infrared heater may only be used under the following conditions:**

- The ambient temperature must be between -50 °C to +50 °C.
- Relative air humidity at a temperature of 25 °C must not exceed 80%.

## TROUBLESHOOTING

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Problem	Solution Tips
Insufficient heating performance	<ul style="list-style-type: none"><li>• Check what the voltage is on the unit's terminal clamps, the values should read 230 V +/- 10 V when in operation.</li><li>• Make sure that the thermostat is in perfect condition.</li><li>• Compare the values indicated on the thermostat with the reading of your standard indoor thermometer, duly located next to the thermostat. The deviation in thermostat start-up must fall within the range of +/- 2 °C.</li></ul>
The unit does not heat	<ul style="list-style-type: none"><li>• Make sure there is power in the power grid.</li><li>• Check whether the power cord is intact.</li><li>• Check all contacts at the unit's terminal board.</li><li>• Check the power plug contact points .</li><li>• See whether the thermostat is working properly.</li><li>• Turn to authorized dealers for help.</li></ul>

## STORAGE INSTRUCTIONS

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The heater should be stored in its original package on such premises where temperature ranges between -50 °C and +50° C and air humidity does not exceed 80%. The heater should be safeguarded against banging, dust and moisture. The heat-emitting panel should be treated and handled with extra care; don't touch its surface, you could damage it! If dusty, clean the panel gently (especially the heating surface) with a perfectly clean and non-abrasive cloth soaked in alcohol-based window cleaner.

## **TERMS OF WARRANTY**

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- The manufacturer guarantees the heater's sound operation for a period of 3 years from the date of purchase.
- Should functional defects occur during the guarantee period as a result of some failure or shortcoming on the part of the manufacturer, then the manufacturer shall repair such an appliance free of charge or replace it in compliance with the stipulations of herein stated terms and conditions.
- Warranty is only valid with an original proof of purchase (receipt) showing the type of product and date of sale.
- This warranty does not constitute a right for indemnification of damages that originated as a result of adjustments carried out on the appliance without the prior written consent of the manufacturer even if these had been made so that the product would comply with the local technical regulations and safety standards in force.

### **This warranty is void should any of the following occur:**

- The buyer tampers with the construction design of the appliance.
- Incorrect handling and/or operating the appliance.
- Using the appliance in ways that do not comply with the relevant applicable provisions and/or the stipulations of the user manual provided by the manufacturer.
- Installing equipment whose operation is in breach of technical regulations and safety standards.
- Repairs carried out by an unauthorised service provider/s or seller/s.
- Some type of accident, a lightning strike, flood, fire as well as other adverse causes that are beyond the reasonable control of the manufacturer so that the event is considered as force majeure.
- Flaws and defects that originated in the course of transportation en route to the client (apart from times when the transportation is carried out by an authorized dealer or the manufacturer).
- The internal system within which the appliance was operated turns out to be defective.
- Operating the appliance at a higher voltage than prescribed (i.e. with a deviation of over 10% above the nominal level) and/or at environmental humidity exceeding 80% at 25°C temperatures.

## CERTIFICATE OF WARRANTY

### I. The appliance was accepted for repair under warranty:

Name of company: \_\_\_\_\_

Address: \_\_\_\_\_

Description of reported defect: \_\_\_\_\_

Received on (date): \_\_\_\_\_ Returned on (date): \_\_\_\_\_

Signature: \_\_\_\_\_

### II. The appliance was accepted for repair under warranty:

Name of company: \_\_\_\_\_

Address: \_\_\_\_\_

Description of reported defect: \_\_\_\_\_

Received on (date): \_\_\_\_\_ Returned on (date): \_\_\_\_\_

Signature: \_\_\_\_\_

## PROOF OF SALE

### The Shadow Crystal Series

905101	905102	905103	905104	905105

Name of Merchant: \_\_\_\_\_

Merchant's Address: \_\_\_\_\_

Date of Sale: \_\_\_\_\_

Salesclerk's Signature: \_\_\_\_\_